Isabella Birindelli
Curriculum Vitae et Studiorum

Generalities

Born in Dunkerque (France) 31/03/1963, Nationality: italian.
Professional Address: Istituto Matematico "G. Castelnuovo".
Università di Roma "La Sapienza".
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Education

- **Ph.D. in Mathematics.**
  Courant Institute of Mathematical Sciences, N.Y.U., New York, U.S.A.
  September 1987-September 1992.
  Thesis :*Second order elliptic equations in general domains:Hopf's lemma and Anti maximum principle* .
  Advisor: Louis Nirenberg.
- **Laurea (Master) in Mathematics**, 110/110 Magna cum Laude.
  Università degli studi di Roma "La Sapienza". January 1987.
  Advisor: Umberto Mosco.

Positions

- March 2007 Professore ordinario (Full professor) Università di Roma "La Sapienza"
- Octobre 2004 Idoneo to position of "Professore Ordinario"
- November '98-March2007:
  Associate Professor at the Università di Roma "La Sapienza" member of the Mathematical Department, confirmed in 2001.
- March '92-November '98:
  Researcher at the Università di Roma "La Sapienza", member of the Mathematical Department

- '90-'92 Teaching Assistant, N.Y.U.

Research field

Elliptic, degenerate elliptic and systems of partial differential equations, in particular I have studied qualitative properties, regularity, existence and non-existence theorems in the semi-linear, quasi-linear and linear cases.

Invited speaker at the following conferences and institutions (last 5 years)

- June 2010, Ecole Normale Superieure, "Fronts and Nonlinear PDE's" in honor H.Berestycki
- January 2010, CIRM, "Analyse gomtrique" in honor of Rafe Mazzeo
- December 2009, Siam Conference, Miami
- June 2009, INDAM school on Symmetry and elliptic PDE.
- September 2008 PDE seminar, Berkeley
- September 2008 "Nonlinear PDE", Roma
- Aprile 2007, Waseda University, Tokyo
- November 2006, Koln University
- September 2006, "Geometric Analysis and Applications", Napoli
- July 2006,"Newtrends in Viscosity Solutions and Nonlinear PDE", Lisboa
- June 2006, AIMS Conference, Poitiers
- June 2006, Subelliptic PDEs and Application to Geometry and Finance, Cortona
- July 2005, East China Normal University, Shangai
- May 2005, Stanford University
- Dicembre 2004, Università di Bologna
- Novembre 2004, Università di Roma
- Septemper 2004 "Viscosity, metric and control theoretic methods in nonlinear PDE's" conference in Serapo
- Giugno 2003 Politecnico di Milano
- Marzo 2003 Laboratoire J.L. Lions, Université Paris VI
- Marzo 2003 Università di Amiens (Organizzatore: A. Farina)

Other recent research-related activities

- Co-Organizer of the conference "Positivity: a key to fully-nonlinear equations" in Vietri, May 2010.

- Invited professor in many important universities: Cergy-Pontoise, Paris X, University of Chile, Stanford University, Rutgers University,
- Reviewer for the "Mathematical Review"
- Referee for many journals including "Journal IHP, Analyse non lineaire", "Communication in Partial Differential Equations", "Journal of European Mathematical Society", " Proceedings of the Royal Society of Edinburgh", "Pacific Journal","Annali di Pisa", "Non Linear Differential equations and applications", "Nonlinearity" ...
- Responsible of many research grants from Sapienza Univeristy, CNR, and GNAMPA

Scientific pubblications

1. with **E. Valdinoci** *On the Allen-Cahn equation in the Grushin plane: a monotone entire solution that is not one-dimensional.* Discrete Contin. Dyn. Syst. 29 (2011), no. 3, 823838
2. with **F. Demengel** One-dimensional symmetry for solutions of Allen Cahn fully nonlinear equations. Symmetry for elliptic PDEs, 115, Contemp. Math., 528, Amer. Math. Soc., Providence, RI, 2010
3. with **S. Patrizi***A Neumann eigenvalue problem for fully nonlinear operatos* Discrete and Continous Dynamical Systems, volume speciale (2010) special volume for L. Nirenberg.
4. with **F. Demengel** *Eigenfunctions for singular fully nonlinear equations in unbounded domains* Nonlinear Diff. Equations. and Appl. (2010)
5. with **F. Demengel** *Regularity and uniqueness of the first eigenfunction for singular fully non linear operators* Journal of Differential Equations (2010)
6. with **F. Demengel** *Uniqueness of the first eigenfunction for fully nonlinear equations: the radial case* Zeitschrift fur Analysis und Ihre Anwendungen, vol. 29, (2010) p. 77-90.
7. with **F. Ferrari, E. Valdinoci** *Semilinear PDEs in the Heisenberg group: the role of the right invariant vector fields.* Nonlinear Analysis vol. 72 (2010) p. 987-997.
8. with **F. Demengel** *Eigenvalue and Dirichlet problem for fully-nonlinear operators in non smooth domains* Journal of mathematical Analysis and its applications, vol. 352 (2009) p. 822-835,
9. with **R. Mazzeo** *Symmetry for solutions of two-phase semilinear elliptic equations on hyperbolic space*, Indiana University Mathematical Journal, vol 58 (2009).
10. with **E. Valdinoci** *The Ginzburg-Landau equation in the Heisenberg group*, Communications in Contemporary Mathematics (2009).

11. with **F. Demengel,** *The Dirichlet problem for singular fully nonlinear operators.* Discrete Contin. Dyn. Syst. 2007, Dynamical Systems and Differential Equations. Proceedings of the 6th AIMS International Conference, suppl.,

12. with **B. Stroffolini,** *Existence theorems for fully nonlinear equations in the Heisenberg group.* Subelliptic PDE's and applications to geometry and finance, 49–55, Lect. Notes Semin. Interdiscip. Mat., 6, Semin. Interdiscip. Mat. (S.I.M.), Potenza, 2007.

13. with **F. Demengel,** *Eigenvalue, maximum principle and regularity for fully non linear homogeneous operators.* Commun. Pure Appl. Anal. 6 (2007), no. 2, 335–366.

14. with **F. Demengel***First eigenvalue and maximum principle for fully nonlinear singular operators.* Adv. Differential Equations 11 (2006), no. 1, 91–119.

15. with **F. Demengel** *Comparison principle and Liouville type results for singular fully nonlinear operators.* Annales de Toulouses (2004)

16. *Homogenization of Hamilton-Jacobi equations in the Heisenberg group* con J. Wigniolle, Comm. in Pure and Applied Analysis (2003)

17. with **F. Demengel** *Existence of solutions for semi-linear equations involving the p-Laplacien : the non coercive case* Calculus of Variation (2004)

18. with **F. Demengel** *Sur les équations de Lane-Emden avec opérateurs non linéaires.* (French) [Lane-Emden equations with fully nonlinear operators] , C. R. Math. Acad. Sci. Paris 336 (2003), no. 9, 725–730.

19. with **E. Lanconelli** *A negative answer to a one-dimensional symmetry problem in the Heisenberg group* Calculus of Variation.(2005)

20. with **F. Demengel** *Existence of solutions for semi-linear equations involving the p-Laplacien : the non coercive case* , Calculus of Variation (2004).

21. with **F. Demengel** *Some Liouville theorems for the p-Laplacian* Proceedings of the 2001 Luminy Conference on Quasilinear Elliptic and Parabolic Equations and System, 35–46 (electronic), Electron. J. Differ. Equ. Conf., 8.

22. with **F. Demengel** *On some partial differential equation for non coercive functional and critical Sobolev exponent.* Differential and Integral Equations 15 (2002), no. 7, 823–837.

23. with **E. Lanconelli** *A note on one dimensional symmetry in Carnot Groups* , Atti Accad. Naz. Lincei Cl. Sci. Fis. Mat. Natur. Rend. Lincei (9) Mat. Appl. 13 (2002), no. 1, 17–22.

24. *Superharmonic functions in the Heisenberg group: estimates and Liouville theorems* NoDEA Nonlinear Differential Equations Appl. 10 (2003), no. 2, 171–185.

25. *One dimensional symmetry in the Heisenberg group* with J. Prajapat Annali della Scuola Normale Superiore di Pisa, 2001

26. *A note on one-dimensional symmetry in Carnot groups* with E. Lanconelli, to appear Rendiconti Accademia Nazionale Lincei.
27. *Monotonicity results for Nilpotent stratified groups* with J. Prajapat, Pacific Journal. Pacific J. Math. 204 (2002), no. 1, 1–17
28. *Bifurcation problems for superlinear elliptic indefinite equations* with J. Giacomoni, Topological Methods in Nonlinear Analysis (2000)
29. *Morse Index and Liouville Property for Superlinear Elliptic Equations on the Heisenberg group* with I. Capuzzo Dolcetta, Contributions in honor of the memory of Ennio De Giorgi (Italian). Ricerche Mat. 49 (2000), suppl., 1–15.
30. *Nonlinear Liouville theorems in the Heisenberg group via the moving plane method* with J. Prajapat, Comm. Partial Differential Equations (1999)
31. *Existence and numerical approximation results for a class of quasi-linear elliptic system arising in image segmentation* with S. Finzi Vita, No DEA(1998).
32. *Existence of the principal eigenvalue for cooperative elliptic systems in a general domain*, with E. Mitidieri e G. Sweers, Differential Equations-Differentil'nye Uravnenija (1998)
33. *Liouville theorems for elliptic inequalities and applications*, with E. Mitidieri, Proceedings of the Royal Society of Edinburgh, vol 128A (1998)
34. *Indefinite semi-linear equations on the Heisenberg group: a priori bounds and existence*, with I. Capuzzo Dolcetta e A. Cutrí, Communications in Partial Differential Equations, **23**, (1998).
35. *Nonlinear Liouville theorems*, Proceedings of the Meeting Reaction Diffusion Systems, Lecture Notes in Pure and Applied Mathematics, Marcel Dekker Inc.(1997)
36. *Liouville theorems for semilinear equations on the Heisenberg group*, with I. Capuzzo Dolcetta and A. Cutrí, Annales de l'Institut Henri Poincaré-Analyse non linéaire,**vol 14**, 3 (1997).
37. *Periodic solutions for a class of second order systems with a small forcing term*, Nonlinear Analysis **Vol 27** (1996).
38. *A semi-linear problem for the Heisenberg Laplacian*, with A. Cutrí, Rendiconti del Seminario dell'Università di Padova **Vol.** , (1996).
39. *Hopf's lemma and Anti-maximum Principle in General Domains*, Journal of Differential Equations, **Vol. 119**, (1995).
40. *Non linear two-obstacles problems: Pointwise regularity*, with M.A. Vivaldi, Rendiconti di Matematica, Serie VII **Vol. 14** , (1994).
41. Ph.D. thesis at the Courant Institute: *Second order elliptic equations in general domains:Hopf's lemma and Anti maximum principle* (1992)
42. *Energy decay for Dirichlet problems in irregular domains with quadratic Hamiltonian*, Integral and differential equations, **Vol 8**, (1992).